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Q.1. Explain Packet Tracer?

→ 1. Packet tracer is cross platfor visual simulation tool designed by Cisco sys that allows user to create it network topologies.

2. The software allows users to simulate the configuration of cisco routers & switches using a simulated command line interface.

3. Packet tracer makes use of drag & drop UI, allowing users to add & remove network devices as they see fit.

4. Packet tracer allows students to design complex & large network, which as often not flexible with physical hardware, due to cost.

Q.2. Explain packet tracer tools.

→ 1. GNS3 - Design & configure
2. Cisco Packet tracer
3. Potty configure
4. Secure CRT - configure
5. Microsoft vision - Design only
6. PRTG monitoring
7. Wireshark Monitor
8. Concept Draw pro - design
9. Network Simulator Design & monitor
10. Free SNMP agent simulator - monitor.

Q.3. Explain Packet Tracer header format.

→ 1. Version: Tells us which IP version we using.

2. Header length: 4 bit field tells length of IP header in 32 bit increments. This field is also called Internet Header length (IHL)

3. Type of service :

This is used for QoS. There are 8 bits to mark the packet within which can be use to give packet a certain treatment.

4. Total length:

this is 16 bit field indicates the entire size of IP packet (header & data) in bytes.

5. Identification:

If the IP packet is fragmented then each fragmented packet will use the same 16 bit identification number to identify to which IP packet they belong to.

6. IP flags: used for fragmentation

7. Fragment offset : It specifies posit^n of fragmented in original fragmented IP packet.

8. Time to live:

It has 8 bit field used to prevent packet from looping around forever.

9. Protocol :

This 8 bit field tell us which protocol is encapsulated in IP packet.

10. Header checksum:

16 bit field is used to store a checksum of header. Used to check errors.

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12. Source Address:

It is 32 bit source IP address.

13. Destinat^n Address:

It is 32 bit destination IP address.

14. IP option:

This field is not often used. When this field used the header length will increase.

(3)

version	Header length	Type of Service	Total length
	identificat^n	IP flags	Fragment offset
Time to live	Protocol		Header Checksum

(4)

Source Address

Destinat^n Address

IP option

Data

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Q.4. Explain wireshark:

→ 1) Wireshark is a free & open source packet analyzer. It is used for troubleshooting analyzer, software & communication protocol development & education.

2) It is cross platform, using Qt widget toolkit in current releases to implement its UI & pcap to capture packets.
It runs on macos, windows, Linux etc.

3) It can also be used to capture packets from most network simulation tools like ns OPNET modelators & netism.

4) Wireshark native networks trace file format is LibPcap format, supported by Libpcap and winCap, it can exchange captured network traces with other application the uses the same format including tcpdump & CA Net Master.